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ABSTRACT

The document, which assesses the educational and career exploration system of the Genesee (Michigan) Intermediate School District, consists of two parts. The first contains project information for the 1971-72 fiscal year, including project overview, description, procedures, and budget allocation. The second part consists of an overview for 1972-73, information about dissemination, modifications, goals and procedures, the project time schedule, and budget. (LJ)

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I. OVERVIEW 1971-72

Title of Project: Educational and Career Exploration System (ECES)
Project Director: Alva E. Mallory
Project Implementor: Jeffrey W. Drake
Applicant Organization: Genesee Intermediate School District
Funds Approved 1971-72: \$143,210
Funds Requested 1972-73: \$100,000

The U.S. Office of Education recently reported that there are more than 20,000 possible careers in America diverse enough to encompass everyone's interests and abilities. Yet 2.5 million young people each year graduate from high school or drop out of high school or college with no planned career. To date the ECES Career Decision-Making Model, developed under grants from the Michigan Department of Education and the Mott Foundation, is emerging as an integral part of a state-wide, career-planning curriculum and counseling process that will prepare students in a systematic way to decide and carefully choose a career field from many.

There have been three primary components developed in the model: (1) a computer-assisted career exploration system with which students interact four or five times throughout a semester, (2) Human Relations trained counselors working individually with students, (3) a Decision-Making Curriculum especially designed to parallel the computer system for narrowing and expanding career alternatives. The curriculum was used within a group guidance framework and added a peer-interaction dimension not achieved prior to this. Students learned to utilize, in addition to the computer, many resources available to them.

The emphasis is upon a decision-making system, utilizing not only information gained through computer interaction, but counselor interaction, peer interaction, parent interaction, business and industry personnel interaction, as well as written information and experiential knowledge.

The grants provided by the Michigan Department of Education and the Charles Stewart Mott Foundation allowed the Genesee Intermediate School District to design, develop, and evaluate ECES (a sophisticated tool utilizing modern computer technology to store, analyze, and summarize the vast amount of information that is required in career planning; then allow student access to this information during his exploration in preparation for making a career decision). These grants also provided for the development of an inservice training program for counselors which provided them with the opportunity to not only learn to use ECES effectively, but also to develop their interpersonal skills and then develop the ability to transmit knowledge of decision-making strategies and the ability to aid students in the development of skills needed for career planning.

The grants thus far have provided for the training of 60 counselors and 40 monitors for the ECES program. In addition, 4,000 students had the opportunity to participate in the ECES program. Each terminal site for the 1971-1972 school year, along

with the number of active students on ECES and their average ECES time usage is listed below:

<u>Location of Terminals 1971-1972</u>	<u>Number Of Students Served</u>	<u>Average Terminal Usage Per Student</u>
Ainsworth High School	118	3 hr. 44 min.
Atherton High School	160	2 hr. 48 min.
Beecher High School	81	1 hr. 42 min.
Bendle High School	131	1 hr. 59 min.
Fenton High School	181	1 hr. 50 min.
Flint Northern High School		
Flint Northwestern High School	591	1 hr. 45 min.
Genesee High School	43	2 hr. 40 min.
Goodrich High School	73	1 hr. 32 min.
Grand Blanc High School	52	4 hr. 47 min.
Kearsley High School	163	2 hr. 05 min.
Lakeville High School	160	2 hr. 37 min.
Swartz Creek High School	101	1 hr. 56 min.
Genesee Community College	36	3 hr. 27 min.
Charlevoix-Emmet Intermediate School District		
Two Terminals: Charlevoix	189	2 hr. 10 min.
Emmet	192	2 hr. 31 min.
Total Students and Average Usage (Tenth Grade)	2,271	2 hr. 14 min.
Eleventh Grade	500	
Total Active Students 1971-1972 (Tenth and Eleventh Grades)	2,771	

II. PROJECT DESCRIPTION

COMPONENTS OF THE EDUCATIONAL AND CAREER EXPLORATION SYSTEM (ECES),

A CAREER DECISION-MAKING PROGRAM

The three basic components of ECES are (1) the terminal-computer subsystem, (2) the career decision-making syllabus, which is an instructional subsystem, and (3) the counselor-monitor subsystem.

ECES TERMINAL - for personalized information

Most of the educational and occupational information the student reviews in this program is gained through the use of ECES, an information system which stores and retrieves information as well as analyzes and summarizes student input.

It consists of six phases: Introduction, Orientation, Exploration, Clarification, Discussion, and Career Planning.

PHASE 1: The Introduction

The counselor and the terminal monitor prepare the student for his sessions on the ECES terminal. The student learns that ECES (1) will allow him to explore occupations, majors, and related areas of study, and (2) receive personalized information that will clarify his explorations and help him see the relationship between his self-expressed interests, abilities, and work values.

The student has already taken a special aptitude (VPI) and interest (OVIS) test. He receives these profiles along with a "Search Strategy" which has been printed by the computer as one suggested plan in researching occupations and majors. The student record in ECES includes courses he has taken, grades received, and a general learning test score.

PHASE 2: Orientation

During the on-line orientation, the student learns how to use the terminal to direct the computer. The student terminal includes a communications terminal and an optical image unit (viewer). The student uses an electronic light probe to touch the screen of the optical image display terminal which calls up pictorial information relating to an occupation interesting to him. The visual information is contained in film-strip cartridges which the student inserts into the terminal.

In addition to the student information already stored in the computer, the student will enter his own self estimates of his interests, work values, and abilities. The student may change his self estimates during his participation on ECES.

During orientation the student also learns about the various charts for which he can call that can assist him in relating the information he has received.

PHASE 3: Exploration

Instructions from the computer program let the user know which cartridge to load

after he has indicated with the probe the number of the career or vocation he wishes to explore. On-the-job scenes, occupational descriptions and cartoon quizzes on specific job characteristics are displayed in color. The student can find out what educational preparation is required to enter a specific occupation, such as high school courses or major areas of study found at the university, trade, or technical school level.

ECES contains four libraries of information. They are:

- OCCUPATIONS, which illustrate 400 vocations with 18,000 individual color film images. It also includes more than 1,000 on-the-job pictures showing real work situations, together with 1,000 situations which people in those occupations are trying to solve. These work samples give the student a feel for what it's like to engage in occupations that range from botany to bowling machine mechanic.
- MAJORS, which describe 400 post high school areas of study that relate to majors that range from African Area Studies to Ecology. This section tells the student which high school and college courses are required to qualify for a particular occupation. More than 6,000 courses are thus described.
- CHARTS, which help the student relate his own interests and ambitions to his explorations. Using this section, the student calls up summaries and analyses of each occupation or major investigated. This library also will list other fields the student has not yet explored, but are related to occupations and majors he said he liked.
- INSTITUTION FINDER, which enables the student to search for colleges, junior colleges, or vocational and technical schools that offer majors or fields of interest he is considering. Size, geographic location, entrance requirements, tuition, religious affiliation (if any) and housing information on more than 2,000 institutions can be obtained.

PHASE 4: Clarification

During the exploration of an occupation or major, the student is continually interacting with the system and entering important data considering his likes and dislikes about the occupation or major. All this information and the information that the student has previously entered into the system is automatically organized and returned in the form of charts whenever the student directs the computer to print the kind of chart or type of analysis he wants.

PHASE 5: Discussion

Information on the majors, detailed descriptions and the courses and summaries of the student's explorations are printed on the typewriter terminal at periodic intervals or upon request by the student. These summaries become the basis for the discussion between the student, his counselor and his parents. Together they decide on whether the student could benefit most from more extensive exploration, clarification, or more detailed discussion and consideration of the student's

possible career alternatives. This phase was the focal point during the development of an inservice training program that provided for systematic training of counselors in interpersonal skills.

PHASE 6: Career Planning

Now, the student, his counselor and his parents consider the alternative courses of action available to the student. Together they decide whether the student could learn more by returning to ECES for further explorations or whether he could benefit most by planning a definite or tentative course of action that would lead to his career goal. This discussion can lead to the selection of a career objective, the selection of the high school courses required to complete a major area of study, the selection of a post high school program and college, should one be required to reach the student's career objective. The overall goal of this systematic approach to career planning is to help the student identify and plan a career goal and then prepare the student to meet the educational requirements of his career choice. This phase was the focal point during the development of an inservice training program that provided for the systematic training of counselors in program planning and development of the decision-making syllabus.

DECISION-MAKING SYLLABUS - for skill building and planning

The decision-making skills syllabus consists of a structure, purpose, and several goals for each group meeting, each individual interview, and each interaction with a computer. It also contains homework assignments, a glossary of terms, student rating scales and rating sheet. In addition, each student is given a special student copy of the syllabus which lists student goals and provides worksheets for each meeting and for homework assignments.

During each session the student is assessed by the counselor on the basis of his emotional, intellectual, and physical behavior in the classroom and upon his homework assignments.

Career decision making is taught to be an expansion of alternatives by exploration of self and occupations, narrowing of alternatives by understanding and weighting of each, and step-by-step breakdown of short-range goals (high school classes, post high school education and training, entry level positions, etc.) that the student may act upon. The philosophy employed in this program is that exploration and understanding lead to action and there can be no understanding without action. The emphasis is upon skills acquisition necessary for action.

COUNSELOR AND MONITOR - for understanding and direction

Empathic listening skills, accurate communication of feeling and content, and ability to initiate are skills which have been taught to and practiced by counselors and monitors working in the ECES decision-making program. They are skills necessary for a helping relationship. They are skills necessary to insure the growth of a student in such a relationship. (Carkhuff, 1967).

The counselor is taught to respond both individually and in groups to each individual student and to each group as a whole. Throughout the program it is stressed that

the student is an individual with responsibility for his own action. Skills are taught and information sought to enable him to act upon his responsibility. The student is given an opportunity to practice decision-making and planning skills.

SUMMARY

The three-component ECES decision-making program is designed to enable the student to become more effective by developing skills in:

1. Identifying career decision points,
2. Identifying sources and types of information,
3. Applying a systematic decision-making model, and
4. Developing a tentative career plan.

The student will experience a series of group interactions, individual interactions with a counselor, and interaction with a computer.

The ECES decision-making program is designed to teach life skills as well as career decision-making skills--skills which can transfer to all areas of a student's life. These skills can best be learned by working with effective people, practicing a step-by-step process of individualized career information dissemination, problem solving, and program planning.

III. RESEARCH

- A. The following is a description of the research treatments for the 1970-1971 school year. There were four different counselor groups in this design.
 1. Group One consisted of counselees of 24 counselors who received a total of 35 hours of training. Twenty hours of this training included interpersonal skills and problem-solving skills training. Fifteen hours were devoted to ECES usage training.
 2. Group Two consisted of counselees of 25 counselors who received 15 hours of ECES usage training.
 3. Group Three consisted of counselees of 17 counselors who received 20 hours of interpersonal skills and problem-solving skills training.
 4. Group Four consisted of counselees of 17 counselors who received no training and served as the control group.
 5. Counselors from Group One and Group Two had their students participate in a group ECES introduction and scheduled each student for three hours of ECES usage. There were 2,178 tenth grade students who participated in the ECES program during the 1970-1971 school year.
 6. All counselors saw students individually at the students' request or on their regular appointment schedule.

7. Columbia University administered the Career Development Inventory, both pre-test and post-test, to 1,412 students in the tenth grade for all four groups and used the data to validate the CDI instrument. Details are reported in the "Assessment of the Second Year of ECES", Teachers College, Columbia University, 1972.
- B. Following is a description of the research treatments for the 1971-1972 school year. The treatment design was modified from the previous year.
1. Group 05 consisted of 106 counselees of ten counselors who received a total of 80 hours of training. Thirty hours of the training included interpersonal skills, problem solving skills, and program development skills training. Twenty hours of ECES training and 30 hours of syllabus development training completed this group's training.
 2. Group 06 consisted of 90 counselees of nine counselors who had previously received ECES training during the 1970-1971 school year.
 3. Group 07 consisted of 70 tenth grade students from control schools who did not receive ECES or Career Decision-Making Skills exposure and served as the control group. They were pre-tested and post-tested on the Career Decision-Making Skills (CDMS) Test Battery. There was a ten week interval between the pre-test and the post-test.
 4. There were 106 tenth grade students who received Career Decision-Making Skills training from Group 05 counselors. Their training involved ten group meetings to cover the syllabus, three personal visits with their counselor, and four ECES terminal visits (five hours). All students were pre-tested and post-tested with the Career Decision-Making Skills (CDMS) Test Battery developed by Dr. Theodore W. Friel.
 5. There were 90 tenth grade students who used ECES for three hours but did not receive Career Decision-Making skills training. The Group 06 counselors saw these students as they normally would, usually on a student request basis. These students were also pre-tested and post-tested on the CDMS Test Battery.
 6. The Baseline Control Groups were established for grades seven through 14 (Junior College Sophomores). The number for each level varied from 40 to 190. They were all pre-tested on the CDMS Test Battery to establish baseline results for the test battery.
 7. Groups One through Four retained their identity from the 1970-71 school year. The students for each group were post-tested using the CDMS Test Battery. The number of students in each group ranged from 50 to 100. Details will be reported in the "Assessment of the Second Year of ECES", Teachers College, Columbia University, 1972.
- C. The following is a description of the research design for the 1972-1973 school year. The research conducted this coming year will be primarily follow-up research.
1. A comprehensive questionnaire will be developed to assess what

influence ECES had on various aspects of the students' lives. The influence of ECES on course choice, change in their curricular choice, further career exploration activity, and communications with parents will be among the areas assessed by this questionnaire. The final format of the questionnaire will be developed and discussed. The two groups will be twelfth grade ECES users and non-users with the second group serving as the control group.

2. A modified shortened version of the Career Decision-Making Syllabus will be developed for use with twelfth grade students. A modified CDMS Test Battery would be administered to six different groups of twelfth grade students. The groups will be as follows:
 - a. Twelfth grade students with prior ECES exposure, trained with the modified syllabus, including use of ECES this year.
 - b. Twelfth grade students with prior ECES exposure who will use ECES again this year.
 - c. Twelfth grade students with prior ECES exposure who will not use ECES or have modified syllabus training this year. They would serve as the control group one.
 - d. Twelfth grade students without prior ECES exposure, trained with the modified syllabus.
 - e. Twelfth grade students without prior ECES exposure who will use ECES this year.
 - f. Twelfth grade students without prior ECES exposure who will not use ECES or have modified syllabus training. They would serve as control group two.
3. The research results of these six groups listed above will be compared with the test results of students who were trained in Career Decision-Making Skills during the 1971-1972 school year.

IV. GOALS AND OBJECTIVES 1971-1972

- A. Students will be provided intensive career counseling at a time when occupational and educational decision-making is most important for the student. Following are the objectives relating to this goal:
 1. Students will increase the amount of time spent talking to parents about career decisions.
 2. Boys and girls will show no significant difference in vocational maturity as a result of using ECES.
 3. A student will be provided a minimum of four to five hours on the ECES terminal.
 4. The student will be more definite in his career decisions as a result of participating with all of the ECES components.
- B. The student will be trained in career decision-making skills so that he can better understand himself and the educational and occupational

options available to him. Following are the objectives that relate to this goal:

1. Students who are socially and economically disadvantaged will demonstrate the same level of career decision-making skills as non-disadvantaged students.
2. Student attendance records will improve following their experience with the ECES terminal and Career Decision-Making Skills training.
3. Students will increase the number of career information sources they can list.
4. Students will increase the number of specific kinds of information they can ask of their career information sources.
5. Students will be able to list a greater quantity of occupational activities performed in their best liked occupation.
6. Students will show an increase in the quality of the occupational activities they can list in their best liked occupation.
7. Students will increase the number of occupational alternatives in their personal occupational classification system.
8. Students will increase the quality of their personal occupational classification system.
9. Students will increase the quantity of career decision-making steps they can list.
10. Students will list career decision-making steps which can be used to make decisions in other areas of their life.
11. Students will be more sophisticated in assessing their ability to make career-planning decisions.
12. Students will be able to make a career decision which quantitatively relates their physical, intellectual, and emotional-interpersonal skills and interests to occupational choices.

C. The counseling services will be improved by relieving counselors of data retrieval and analysis functions and thereby making more efficient use of their time to help students set and reach occupational objectives. Following are the objectives that relate to this goal:

1. Schools will be able to list the programs they need to deliver skills to students that will enable them to meet job entry skills.
2. Students will report that they place more importance on career planning as a result of their experiences in the project.

3. A computer-assisted tool (ECES) will significantly improve career counseling services by allowing the counselor to do higher level counseling with students.
 4. A systematic, decision-making syllabus will be developed to effectively use ECES as a career guidance tool.
- D. The counselor will be trained in ECES skills, interpersonal skills, and career decision-making skills so that he can function more effectively in individual counseling sessions and group counseling sessions which are intended to teach the students career decision-making skills. Following are the objectives that relate to this goal:
1. Students will indicate that they can use counselors and parents more effectively in their career planning.
 2. Students will be better prepared for helpful sessions with their counselors.
 3. The counselor will be better trained by receiving training in ECES skills, interpersonal skills and syllabus skills to work more effectively with the students.

V. RESEARCH

- A. The following research supports the plausibility of the objectives 1-4 listed under Goal IV-A on page eight.
1. "The data suggest that following use of ECES, and slightly more following the CDMS training, that students reported a slight increase in time spent talking with their parents." (Friel, 1972, p. 13.)
 2. "There is no evidence that the effectiveness of ECES depended on sex." (Columbia University Report, 1972, p. 34.)
 3. Table seven shows that the adjusted means on CDI Scale A tended to increase steadily with increased use time. For example, those who used ECES less than one hour had a mean of 98.1 while those students using the system for six-seven hours had a mean of 118.1. Table eight shows that differences among the means are significant at the .01 level (Columbia University Report, 1972, p. 35.)
 4. "The ECES ONLY students reported at the end of the ninth grade that only about 20% were rather definite or very definite about their future plans while at the end of the tenth grade 50% of the ECES ONLY group reported this degree of definiteness. In the case of the DMS students, only 16% reported definiteness at the end of the ninth grade with 63% at the end of the tenth grade. In general, the tenth grade ECES experience provided encouraging evidence of the positive feelings of students toward that experience. In general they found participation in the ECES project to be of considerable value, they moved along in the definiteness

of their career plans, they engaged in career planning activities and in interactions with counselors and parents, they found the terminal visits and the DMS group sessions of considerable help in occupational planning and in stimulating interactions with their counselors on educational and occupational planning." (Columbia University Report, 1972, p. 86, 88.)

B. The following research supports objectives 1-12 listed under Goal IV-B on pages eight and nine.

1. None at present.
2. Control groups had a significantly higher absentee rate than did either DMS or ECES ONLY students (Columbia University Report, 1972, p. 64.)
3. "The experimental group scores indicated that systematically trained students gained significantly ($t=4.5, < .01$) in their ability to list unique career information sources, and also listed significantly more sources than ECES II (ECES ONLY) and control groups. The ECES II.5 (DMS) students listed a greater quantity of unique career information sources than did any other student groups." (Friel, 1972, p. 8.)
4. "The experimental group data suggests that systematically trained students gained significantly ($t=33, < .01$) in their ability to list a greater quantity of career information items and also can list significantly more items than ECES II and control students." (Friel, 1972, p. 9.)
5. "The experimental scores indicates that the systematically trained students made a significant gain ($t=3.44, < .01$) in the number of activities listed, and listed significantly more ($t=3.04, < .01$) than its treatment control group ECES II, which gained, but not significantly. After training, the tenth grade ECES II.5 students listed more activities than the 11-14 grade baseline controls." (Friel, 1972, p. 6.)
6. "The experimental group scores suggest that the systematically trained students gained significantly ($t=5.2, < .01$) in the quality of activities listed, and listed significantly greater ($t=5.2, < .01$) quality of activities than did the ECES II or control groups. The ECES II.5 students also listed higher quality activities than did any other student group." (Friel, 1972, p. 7.)
- 7-8. "The experimental group scores indicate that the ECES II.5 students gained significantly ($t=1.95, < .05$) in their ability to classify and expand occupational alternatives, and also scored significantly higher ($t=1.95, < .05$) than the ECES II and control groups." (Friel, 1972, p. 10.)
- 9-10. "The experimental group scores indicate that the systematically trained students gained significantly ($t=2.38, < .01$) in their quan-

tity of occupational decision-making skills, and also scored significantly higher than the ECES II and control groups." (Friel, 1972, p. 10.)

11. "The more sophisticated systematically trained students, ECES II.5, give themselves the same initial rating--3.0. However, the ECES II.5 students place the ECES experience into a more discriminating prospective by suggesting that while they gain significantly from that experience ($t=3.7, < .01$), the skills training itself provided an additional and significant ($t=6.4, < .01$) contribution to their preparedness for career-planning decisions." (Friel, 1972, p. 11.)
12. "The experimental group scores indicate that the systematically trained students gained significantly ($t=2.38, < .01$) in their quantity of occupational decision-making skills, and also scored significantly higher than the ECES II and control groups." (Friel, 1972, p. 10.)

C. The following research supports objectives 1-4 listed under Goal IV-C on pages nine and ten.

1. This data can be retrieved from the students' records for the purpose of planning curriculum to meet the students' objectives.
2. "The data suggest that following the use of ECES, and significantly ($t=5.55, < .01$) more so following the CDMS training, that students report an increased importance in the need to plan and prepare for a future career." (Friel, 1972, p. 14.)
- 3-4. The question is how helpful were these two basic components of the program (ECES and CDMS) to the students in their career planning. "In both the ECES ONLY and the DMS experimental groups, ECES terminal visits received higher ratings than did counselor conferences. For example, the responses to question 5 revealed that among the ECES ONLY students, 44% found ECES terminal visits helpful in occupational planning and 24% of the students found individual conferences helpful. Among the DMS group, 70% found ECES terminal visits helpful, 39% found counselor conferences helpful, and 39% found DMS group sessions helpful." This suggests that the use of an ECES terminal in conjunction with a Decision-Making Skills systematic program definitely improves the career guidance services for students. (Columbia University Report, 1972, p. 83.)

D. The following research supports objectives 1-3 listed under Goal IV-D on page ten.

1. "After use of ECES, and significantly ($t=4.5, < .01$) more so after CDMS training, students report that they will be able to make better use of talks with their counselors and parents about career planning decisions. (Friel, 1972, p. 14.)

"IN SUMMARY it can be rather confidently concluded (1) that parents of both the DMS and ECES groups had a generally positive attitude

toward the ECES program, (2) that the participation at DMS group sessions facilitated and increased the effects of exposure to ECES, particularly in terms of understanding of oneself in relation to occupational possibilities, and (3) that it resulted in increased interaction between parents and children concerning positive steps which their children should be taking in looking forward to their post-high school careers." (Columbia University Report, 1972, pp. 93-94.)

- 2-3. "Almost 86% of the DMS group reported believing that because of using ECES they would profit more from talks with their counselor, whereas 64% of the ECES ONLY group reported likewise.

"The above observation should not minimize the fact that even the ECES only group were stimulated to engage in a considerable amount of career planning activity and considerable exploration of facts about themselves or the world of education and work through exposure to the system. It demonstrates, however, rather clearly, that supplementing ECES terminal visits with organized DMS group sessions does stimulate or facilitate the hoped-for outcomes of the ECES system itself." (Columbia University Report, 1972, p. 85.)

VI. PROCEDURES AND BUDGET ALLOCATION

	<u>Fraction Of Budget</u>	<u>Budget Allocation</u>
A. GOAL: Intensive career counseling will be provided at a time when occupational and educational decision-making is most important for the students through:	1/8	
1. Group Counseling.		\$ 1,500
2. Individual Counseling.		1,500
3. Student Interaction with the ECES Terminal.		20,125
B. GOAL: The student will be trained in career decision-making skills so that he can better understand himself and the educational and occupational options available to him by:	3/8	
1. Attending Ten Group Planning Meetings.		6,000
2. Seeing His Counselor for Three Individual Sessions.		3,000
3. Interacting with the ECES Terminal for Five Hours.		60,375
C. GOAL: The counseling services will be improved by relieving counselors of data retrieval and analysis functions and thereby making more efficient use of their time to help students set and reach occupational objectives.	3/8	
1. Retrieval of Occupational and Educational Information.		17,350

	<u>Fraction Of Budget</u>	<u>Budget Allocation</u>
2. Analysis of Occupational, Educational and Personal Data.		17,350
3. Summary Reports of Student Input.		17,350
4. A Systematic Structure for Exploring Educational Programs and Occupations.		17,350
D. GOAL: The counselor will be trained in ECES skills, interpersonal skills and career decision-making skills so that he can function more effectively in individual counseling sessions and group counseling sessions which are intended to teach the students career decision-making skills.	1/8	
1. ECES Skills Training.		20,100
2. Interpersonal Skills Training.		1,500
3. Career Decision-Making Syllabus Training.		1,500
E. TOTAL		\$185,000
F. NOTE: This budget does not reflect:		
1. Data Processing Personnel.		20,450
2. Indirect Costs on Data Processing Equipment.		31,000
3. Operation and Maintenance of Plant.		1,500
4. Administration of Program.		24,000
5. VPI and OVIS Testing.		20,000
6. Statistical and Evaluation.		10,000
		(Total \$106,950)

During fiscal year 1971-72, there was a cost per student of \$66. The projected cost this year, based on direct cost of four hours per student on the ECES system for 180 days, is \$37. This figure includes a comprehensive testing program, follow-up evaluation and inservice training for counselors and monitors. It does not reflect the Genesee Intermediate School District in-kind services (F1 to F6 above), monitors of the local school district or counselor time. If the program were expanded to accommodate all tenth, eleventh and twelfth grade students in the Genesee Intermediate School District, it is projected that the ECES cost would be reduced to a little over \$13 per student.

VII. OVERVIEW 1972-1973

The development and implementation of the ECES Career Decision-Making Program has stimulated some modifications and several extensions to the program. The career decision-making skills training remains as an integral part of this comprehensive model.

Career Exploration would be the first phase of training for the student. The student would become increasingly aware of the personal, career, and curriculum aspects which relate to his career planning. He would examine his physical, intellectual, and emotional needs in relationship to these three aspects. The student would also look at the interrelationships among his physical, intellectual, and emotional needs in each area.

Career Understanding is the second phase of training which focuses on the evaluation of the student's present and future career possibilities. Again, the student views the personal, career, and curriculum aspects and relates them to his physical, intellectual, and emotional needs. In this phase the student becomes skillful in the art of problem solving and decision making. He is able to expand and narrow alternatives based upon his personal criteria for the physical, intellectual, and emotional areas. The student learns to explore and clarify his career ladder for future career objectives in addition to looking at immediate entry level jobs.

After the student has progressed through the first two phases of training, he enters the Career Planning phase. In this phase the student involves himself with program development. The student will write programs for himself which relate to the physical, intellectual, and emotional areas. In program development he will focus upon what courses to take in high school and after high school if necessary. The student will identify alternative routes of career planning, choose the most appropriate route, and assess whether or not he has all the skills necessary for this route. Expanding and narrowing the number of routes will be an important part of this phase.

The fourth phase is the Career Preparation phase. In this phase the program developed in phase three is implemented. This could mean taking the required or recommended courses for a chosen career area.

Career Placement, a very important area in which to develop skill, is the fifth phase of this program. In this phase the student learns about job development. The student also becomes skillful in his job interviewing and his job acquisition abilities. Again the skills of expanding and narrowing are utilized because of the decision-making implications which are inherent in career placement.

The final program phase is that of Career Growth. The career ladder is involved here with the movement from the entry level job to higher level positions. Three areas are emphasized in this phase. Job maintenance skills are required to keep pace with the changing demands of the job. Job improvement skills are necessary to better oneself in his present position to create opportunities for advancement. Job growth skills are a prerequisite for advancing to a higher position on the career ladder. The student should ultimately learn to be skillful in all of

these areas to advance successfully in his work. At a minimum, however, the student's awareness of these factors in career growth would be required.

These six phases comprise a comprehensive career development program. We will explore the possibilities of expediting such a program for the second semester of the 1972-1973 school year. If a favorable assessment is made of our situation, the program or several phases of the program will be implemented. A priority program to be implemented will be a model placement program.

During the 1972-1973 school year, there will be 19 ECES terminals located at the following terminal sites:

LOCATION OF TERMINALS 1972-1973

Ainsworth High School
Atherton Junior High School
Beecher High School
Carman High School
Clio High School
Davison High School (2)
Fenton High School
Flint Northwestern High School
Grand Blanc High School
Kearsley High School
Lake Fenton High School
Lakeville High School
Hill-McCloy High School
Swartz Creek High School
Genesee Community College
Genesee Intermediate School District
Charlevoix-Emmet Intermediate School District (2)

VIII. DISSEMINATION

- A. It is the policy of the Genesee Intermediate School District to provide lectures and/or demonstrations to any group in Michigan that is interested in learning more about the ECES Career Decision-Making Skills Program.
- B. Descriptive reports and evaluation reports of this project will be available upon request.
- C. The ECES data processing package will be made available upon request at cost (tapes and documentation).
- D. The Counselor Guide (Syllabus) and the Student Guide to Career Decision-Skills are available at cost upon request.
- E. Consultant assistance for implementation and training of the ECES Career Decision-Making Skills Program will be made available at cost upon request.

IX. MODIFICATIONS

- A. Immediate Considerations (1972-1973).
 - 1. The redesign of the ECES Search Strategy.
 - 2. The redesign of the Student File so that the three student files (disk packs) can be merged into one student file (disk pack).
 - 3. The rewrite of programs to update occupational information.
 - 4. The rewrite of the Counselor Guide (Syllabus) and the Student Guide to Career Decision-Making Skills.
 - 5. The development of a modified shortened version of the Counselor and Student Guides to Career Decision-Making Skills.
 - 6. The extension of the ECES Career Decision-Making Program to include the following phases:
 - a. Career Exploration
 - b. Career Understanding
 - c. Career Planning
 - d. Career Preparation
 - e. Career Placement
 - f. Career Growth
- B. Rationale for Immediate Considerations listed above.
 - 1. A redesign of the ECES Search Strategy is merited because of results of Student Reaction Forms. Students say that the lists are too long. They also say that the Search Strategy must be made more usable. Students have requested that the Search

Strategy be changed to be more directive and include aptitude test and interest inventory results.

2. All three grades of students would be able to use the ECES system at one time. This is not possible with the present computer situation.
3. Salary and occupational outlook information has become outdated and, therefore, it is necessary to update this occupational information.
4. The necessity of a rewrite is based upon requests made by both counselors and students.
5. The need for a modified shortened version is based upon requests from counselors and students.
6. The need for these extensions has been established by the Michigan Department of Education and Eastern Psychological, Educational, and Community Services, Inc.

C. Long Range Recommendations for the Future. (Beyond 1972-1973)

1. The rewrite of the ECES computer program using a universal and faster language.
2. The redesign of the ECES terminal to incorporate the following features:
 - a. The communications and image display unit would be consolidated into one unit.
 - b. The 16mm film load cartridges would be replaced by color microfiche jackets.
 - c. The feasibility of an audio mode together with the visual mode would be considered.
 - d. The addition of an on-line course-scheduling feature would be considered.
 - e. The addition of a cathode ray tube for the counselor's office for retrieval of student grades, credit status information and student attendance records which could be stored in the computer memory bank would be considered.

X. GOALS AND PROCEDURES FOR FISCAL YEAR 1972-73.

- A. The Shared-Time Director for Vocational Education (STD) and the Consultant for Guidance and Counseling (CGC) will be trained in career development skills and associated skills. Following are the objectives which relate to this goal:
 1. The STD and CGC will participate in Interpersonal Skills Training.
 2. The STD and CGC will participate in Problem Solving Skills Training.

3. The STD and CGC will participate in Program Development Skills Training.
 4. The STD and CGC will participate in Teacher Methodology Skills Training.
 5. The STD and CGC will participate in Curriculum Delivery Skills Training.
 6. The STD and CGC will participate in Classroom Management Skills Training.
 7. The STD and CGC will participate in Career Development Skills Training which will cover career curriculum integration skills, career orientation skills, career decision-making skills, career planning skills, career preparation skills, and career placement skills.
- B. The Consultant for Guidance and Counseling will develop and implement the on-going Human Resource Development and Career Development Skills training programs for counselors and monitors. Following are the objectives which relate to the goal:
1. Thirty-five counselors will be provided training in ECES Skills.
 2. Twelve counselors will be provided training in Interpersonal Skills.
 3. Twelve counselors will be provided training in Decision-Making Skills.
 4. Forty monitors will be provided training in ECES Skills.
- C. Procedures will be developed for the updating of occupational information in the salary and occupational outlook areas. Following are the objectives which relate to this goal:
1. Specific salary information for all 400 occupations in ECES will be updated on-line through the IBM 2740 Communications Terminal.
 2. The occupational outlook information frames will be reviewed for each occupation that is necessary. An updated message will be programmed to print on the 2740 Communications Terminal in place of the general outlook that is presented on film.
- D. The current tenth, eleventh, and twelfth grade files will be merged into one disk pack so that all students who are eligible to participate on ECES can be on-line at the same time. The current occupational strategy will be redesigned to incorporate aptitude test data as well as interest data before a recommended search is listed. Following are the objectives which relate to this goal:
1. A data processing program will be written to merge the three student files into one student file on a single disk pack.

2. The occupational search strategy will be revised to utilize both interest and aptitude test data before printing a listing for an occupational search strategy.
- E. The Shared-Time Director for Vocational Education and the Guidance and Counseling Consultant will explore the possibility of offering additional programs and training in career development for teachers, the community, the family, and business and industry. Following are the objectives which relate to this goal
1. Programs and training for teacher participation in career development will be explored.
 2. Programs and training for community participation in career development will be explored.
 3. Programs and training for family participation in career development will be explored.
 4. Programs and training for business and industry participation in career development will be explored.
- F. The Genesee Intermediate School District and the Oakland Intermediate School District will coordinate local school districts efforts to deliver career development skills to students. Following are the objectives which relate to this goal
1. The Shared-Time Director for Vocational Education and the Guidance and Counseling Consultant will be trained in Pontiac with Oakland Intermediate School District personnel.
 2. Genesee Intermediate School District personnel and Oakland Intermediate School District personnel will share their experiences about delivery of career development skills programs for students in local schools.
- G. The Genesee Intermediate School District will cooperate with the Vocational Education and Career Development Service personnel in planning, developing and implementing pilot projects related to the state's career development models.
1. The Genesee Intermediate School District, with consultation assistance from the Vocational Education and Career Development Service, will develop and implement a model Career Exploration Skills Training program for students in designated school districts.
 2. The Genesee Intermediate School District with consultation assistance from the Vocational Education and Career Development Service, will develop and implement a model Career Understanding Skills Training program for students in designated school districts.
 3. The Genesee Intermediate School District with consultation assistance from the Vocational Education and Career Development Service, will

develop and implement a model Career Planning Skills Training program for students in designated school districts.

4. The Genesee Intermediate School District with consultation assistance from the Vocational Education and Career Development Service, will develop and implement a model Career Preparation Skills Training program for students in designated school districts.
 5. The Genesee Intermediate School District with consultation assistance from the Vocational Education and Career Development Service, will develop and implement a model Career Placement Skills Training program for students in designated school districts.
 6. The Genesee Intermediate School District with consultation assistance from the Vocational Education and Career Development Service, will develop and implement a model Career Growth Skills Training program for students in designated school districts.
- H. The Genesee Intermediate School District will conduct a follow-up evaluation for students who have been involved with the ECES Career Decision-Making Program. Following are the objectives which relate to this goal:
1. The Genesee Intermediate School District will develop a follow-up questionnaire to assess the effect ECES had on the following areas:
 - a. Course choice.
 - b. Change in curricular choice.
 - c. Further career exploration activity.
 - d. Communications with parents.
 - e. Other change factors.
 2. The Genesee Intermediate School District will administer this follow-up questionnaire to selected twelfth grade students. This will include two groups:
 - a. ECES Users Group.
 - b. Control Group.
 3. The Genesee Intermediate School District will develop a modified shortened version of the Career Decision-Making Syllabus for use with twelfth grade students.
 4. Selected counselors will train twelfth grade students using the modified Career Decision-Making Syllabus.
 5. The Genesee Intermediate School District will modify the Career Decision-Making Skills Test Battery for use in evaluation of modified syllabus training.
 6. The Genesee Intermediate School District will administer the pre-test and post-test of this modified test battery to the following groups:
 - a. Twelfth grade students with prior ECES exposure, trained

- with the modified syllabus.
- b. Twelfth grade students with prior ECES exposure who will use ECES again this year.
 - c. Twelfth grade students with prior ECES exposure who will not use ECES or have modified syllabus training this year. They would serve as control group one.
 - d. Twelfth grade students without prior ECES exposure, trained with the modified syllabus.
 - e. Twelfth grade students without prior ECES exposure who will use ECES this year.
 - f. Twelfth grade students without prior ECES exposure who will not use ECES or have modified syllabus training. They would serve as control group two.

XI. TIME SCHEDULE 1972-1973

July 1, 1972	Update all major information on the institution finder.
August, 1972	Inservice training for new monitors.
September 1 to October 15, 1972	Install 16 terminals in local high schools.
September 1 to December 1, 1972	Administer VPI and OVIS tests to all 9th graders in public and non-profit private schools in the Genesee Intermediate School District.
September 18 to November 1, 1972	Counselor and administrator orientation on inservice training for counselors.
September 18 to January 1, 1973	Comprehensive inservice training for counselors. Thirty hours of systematic interpersonal skills training, 20 hours of ECES training, 20 hours of syllabus training.
October, 1972	Evaluation report will be presented to the Michigan State Legislature with a request for funds to start implementing a state-wide system and the development of ECES III.
November 1, 1972	Implement Career Decision-Making Programs in 13 high schools.
November 1 to January 1, 1973	Write a data processing program to merge three grades of students into one student file.
February 1 to June 30, 1973	Follow up on implementation and field evaluation of ECES program.
June 15 to August 15, 1973	Summer Inservice Training for counselors. Summer Inservice Training for School Administrators.

June to December, 1973

Update occupational information in the system.

August, 1973

Update student records in the system.
Update majors in the institution finder.
Install terminals in local schools.

September 1 to December 31, 1973

Full implementation of Career Decision-Making
Programs in all local school districts.

September 1, 1973

Follow-up evaluation report due on Career
Decision-Making Models.

XII. DETAILED BUDGET DESCRIPTION
FISCAL YEAR 1972-1973

	<u>Michigan Dept. of Education</u>	<u>Other Sources</u>
I. DIRECT COSTS		
A. <u>Personnel</u>		
1. Monitor Trainer (train and supervise monitors).	\$ 7,000	\$
2. Secretary.		7,500
3. Administrative Assistant (update majors, institution information, occupational information).	3,100	
B. <u>Supplies and Materials</u>		
1. Computer Print-Out Paper for Students; Key-Punch Cards.	500	
2. Microfilm Supplies.	500	
C. <u>Communications/Freight</u>	1,000	
D. <u>Services</u>		
1. Systems Engineering and Programming.	8,000	
2. Inservice Training; Consultant Services.	5,000	
3. Testing (VPI & OVIS).		20,000
4. Follow-Up Evaluation.	5,000	
E. <u>Equipment (Leased)</u>		
S/360-40 Computer		
Card Read-Punch		
1403 Printer		
2314 Disk Storage		
Tape-Drive (Model 2415)		
2821 Control Unit		
2780 Communications Terminal		
2701 Transmission Control Unit		
2702 Transmission Control Unit		
2711 Time Adapter		
Four Leased Lines @ \$10 x 12 months		
Disk Packs		
19 Student Terminals and Data Sets	<u>69,900</u>	<u>50,100</u>

	<u>Michigan Dept. of Education</u>	<u>Other Sources</u>
F. <u>Total Requested from the Michigan Department of Education for 1972-73.</u>	\$100,000	
G. <u>Subtotal Other Sources.</u>		\$ 77,600
II. INDIRECT COSTS (All indirect costs will be paid by the applicant organization.)		
A. <u>25% Data Processing Personnel Time</u>		21,500
B. <u>25% of Time On Data Processing Equipment</u>		35,000
C. <u>Operation and Maintenance of Plant.</u>		2,000
D. <u>Administration (50% Director, 90% Consultant, 10% Business Manager).</u>		<u>30,000</u>
III. TOTAL MICHIGAN DEPARTMENT OF EDUCATION AND OTHER SOURCES	\$100,000	\$166,100

XIII. BIBLIOGRAPHY

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